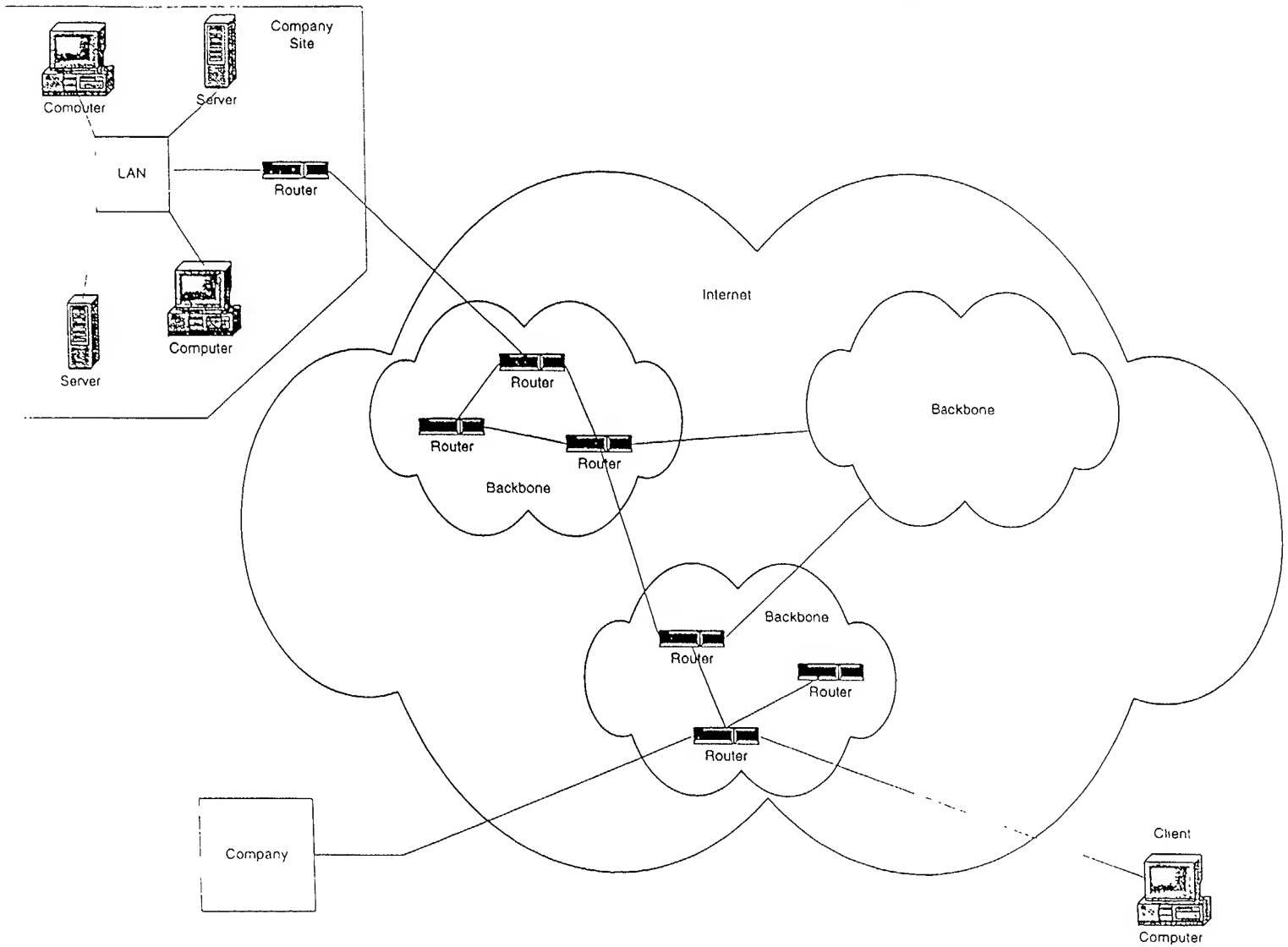
Company Site
Computer
Server
LAN
Router
Server
Computer
Internet
Router
Router
Router
Backbone
Backbone
Router
Router
Router
Company
Client
Computer

Figure 1

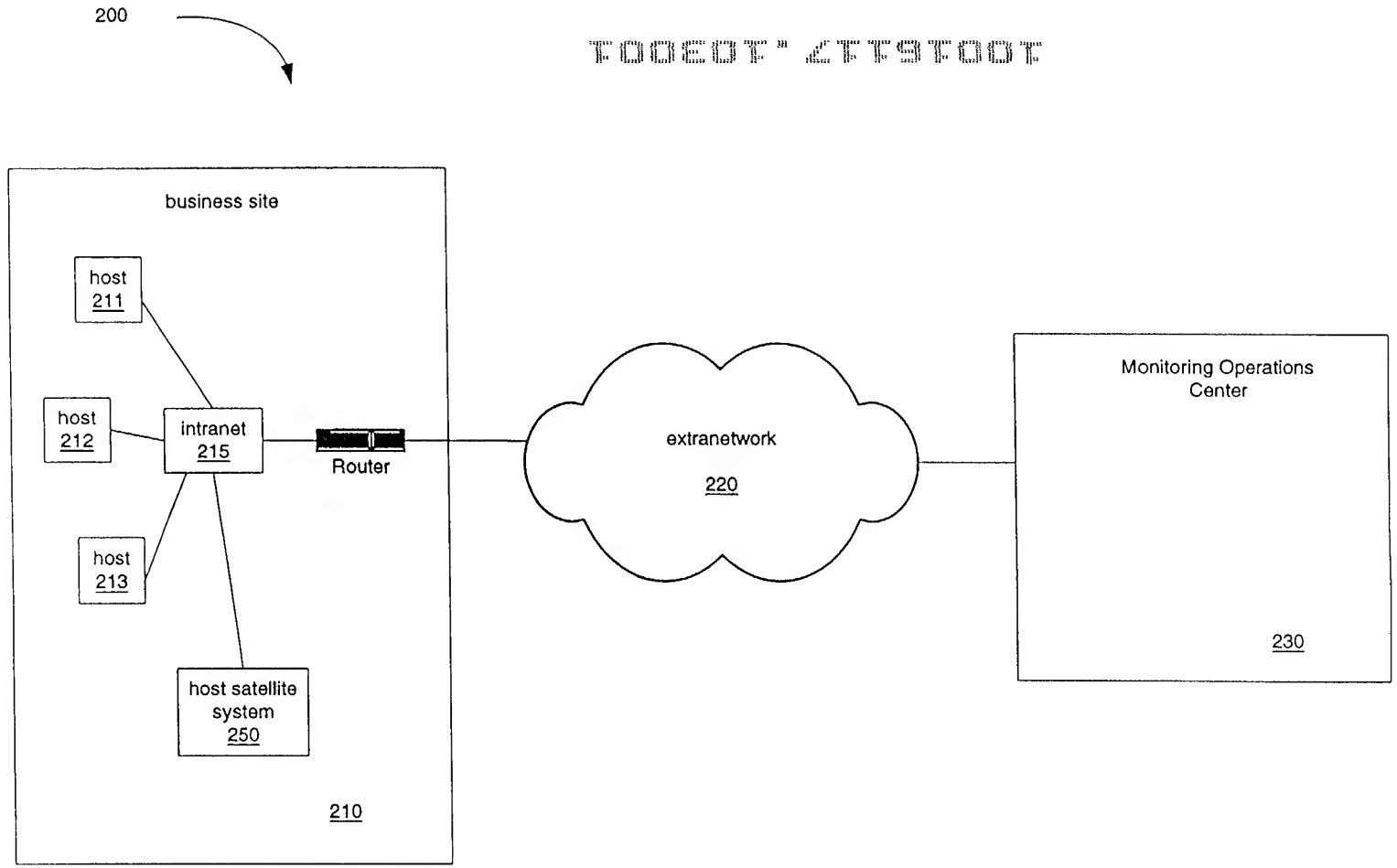
200
business site
host
211
host
212
intranet
215
Router
host
213
host satellite
system
250
210
extranetwork
220
Monitoring Operations
Center
230

Figure 2A

| TEST | PORT # | MONITORING |
|---|---|---|
| check_dig | NP | Tests host DNS |
| check_disk | NP | Checks disk space (%) host system and generates alert if percentage is above threshold values. |
| check_dns_resolution | NP | Obtains IP address for specified host/domain query using nslookup. Can specify optional DNS server or default to specified server. |
| check_ftp | 21 | Tests an FTP connection with the host and generates an alert if answer time is above threshold values. |
| check_printer | NP | Tests the status of a printer. |
| check_http/htttps | 80 (http)<br>443<br>(https) | Test the HTTP service on the host. Test normal and secure severs and generates an alert if the answer time is above a threshold value. Follows redirects, searches for strings and regular expressions, checks connection times, and reports on certificate expiration times. |
| check_imap | 143 | Tests the IMAP4 service on the specified host and generates an alert if answer time is above threshold values. |
| check_ircd | 6667 | Tests IRC daemon on the host and returns an alert of the number of users is above threshold values. |
| check_nntp | 119 | Tests the network news service on host and generates an alert if answer time is above threshold values. |
| check_ntp | NP | Tests Network Time service and generates an alert when offset(s) is above threshold values. |
| check_oracle | NP | Tests remote or local TNS status and local database status. |
| check_pop | 110 | Tests POP mail service on host and generates an alert if answer time is above threshold values. |
| check_postgresql | 5432 | Tests postgres SQL service on host and generates an alert if answer time is above threshold values. |
| check_real | 554 | Tests the IMAP4 service on the specified host (at port 554) and generates an alert if answer time is above threshold values. |
| check_rpc | | Tests if a RPC service is registered and running on host using rpcinfo command. |
| check_smtp | 25 | Tests the SMTP mail service on host and generates an alert if answer time is above threshold values. |
| check_snmp | | Tests SNMP service on host and generates an alert if answer time is above threshold values. |
| check_ssh | 22 | Tests SSH service on host and generates an alert if request times out. |
| check_tcp | Any | Tests TCP connections with host and generates an alert if answer time is above threshold values. |
| check_time | NP | Tests time port on host and generates an alert if answer time is above threshold values. |
| check_udp | Any | Tests UDP connection on host and generates an alert if answer time is above threshold values. |

291

Figure 2B

| PARAMETER | THRESHOLD LEVELS | THRESHOLD VALUES |
|---|---|---|
| Disk Utilization | OK<br>Warning<br>Critical | < 75%<br>75%<br>90% |
| Processor Utilization | OK<br>Warning<br>Critical | < 70%<br>70%<br>85% |
| Load | OK<br>Warning<br>Critical | < 0.8<br>0.8<br>1 |
| Memory Utilization | OK<br>Warning<br>Critical | < 20%<br>20% free<br>10% free |
| Swap Space | OK<br>Warning<br>Critical | < 20%<br>20% free<br>10% free |
| Number of Users | OK<br>Warning<br>Critical | < 10 users<br>10 users<br>20 users |
| Number of Processes | OK<br>Warning<br>Critical | < 400 processes<br>400 processes<br>700 processes |

241
242
243
244
245
246

Figure 2C

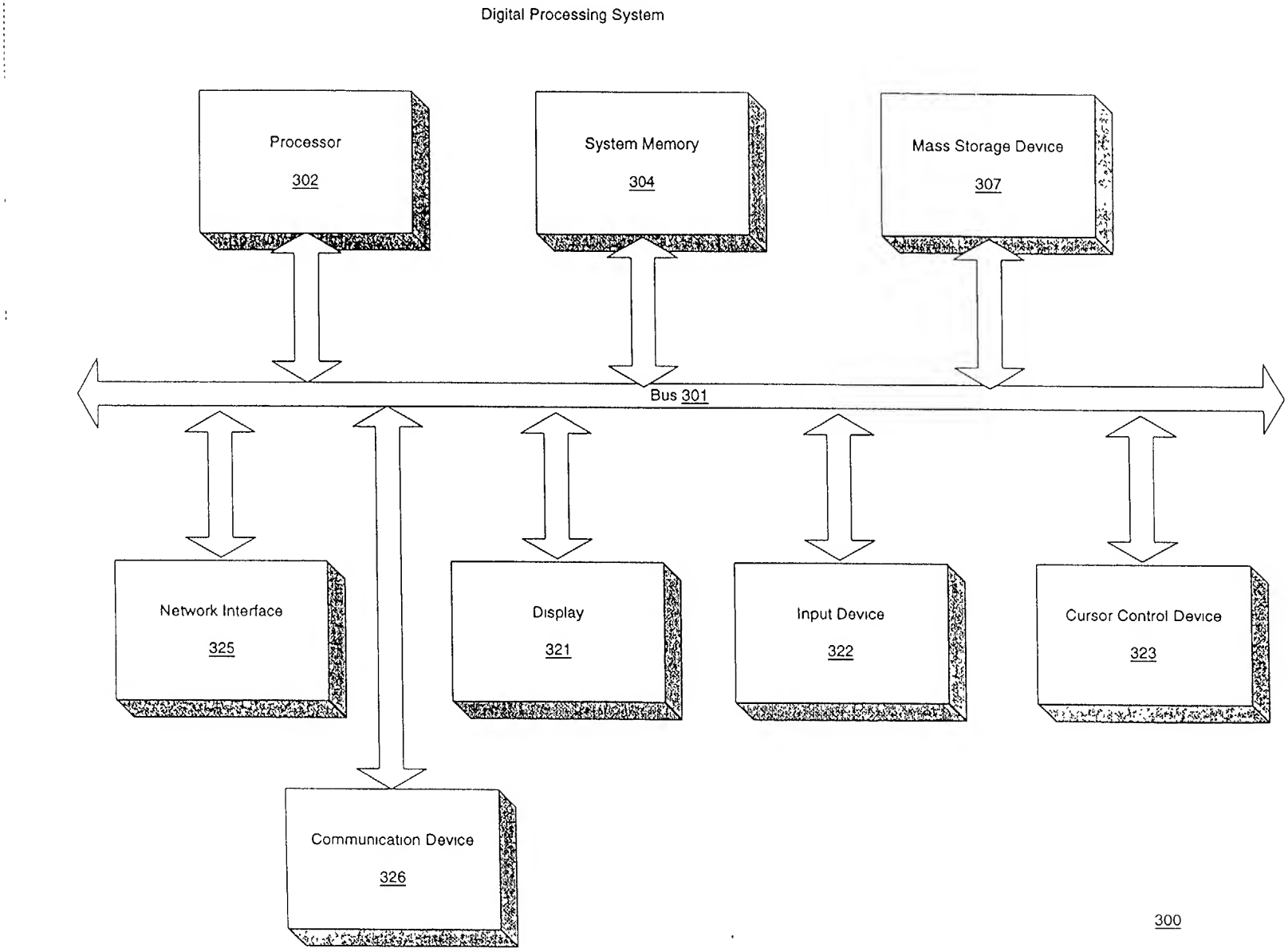
Digital Processing System
Processor
302
System Memory
304
Mass Storage Device
307
Bus 301
Network Interface
325
Display
321
Input Device
322
Cursor Control Device
323
Communication Device
326
300

Figure 3

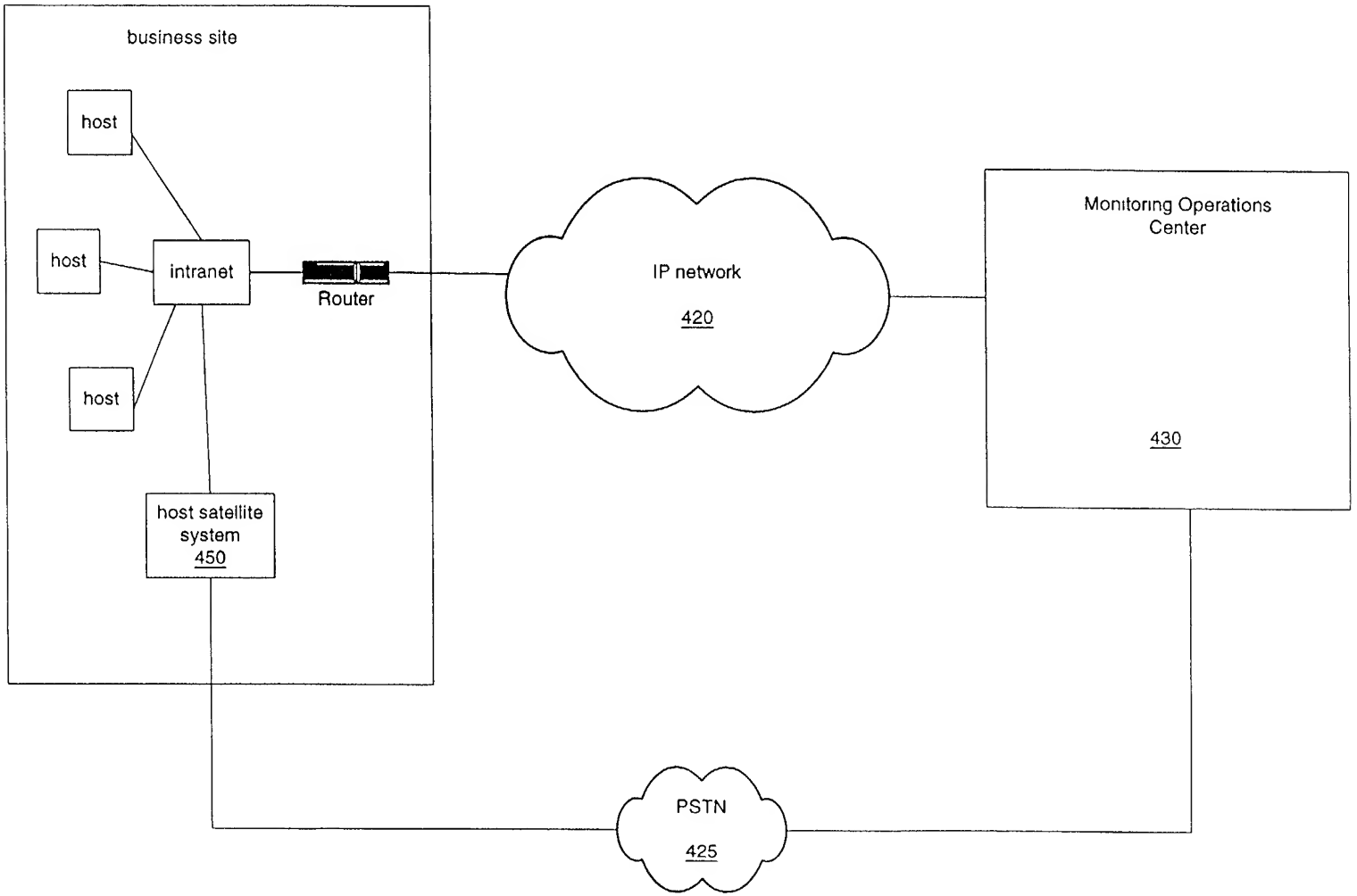
business site
host
host
intranet
Router
host
host satellite system
450
IP network
420
Monitoring Operations Center
430
PSTN
425

Figure 4

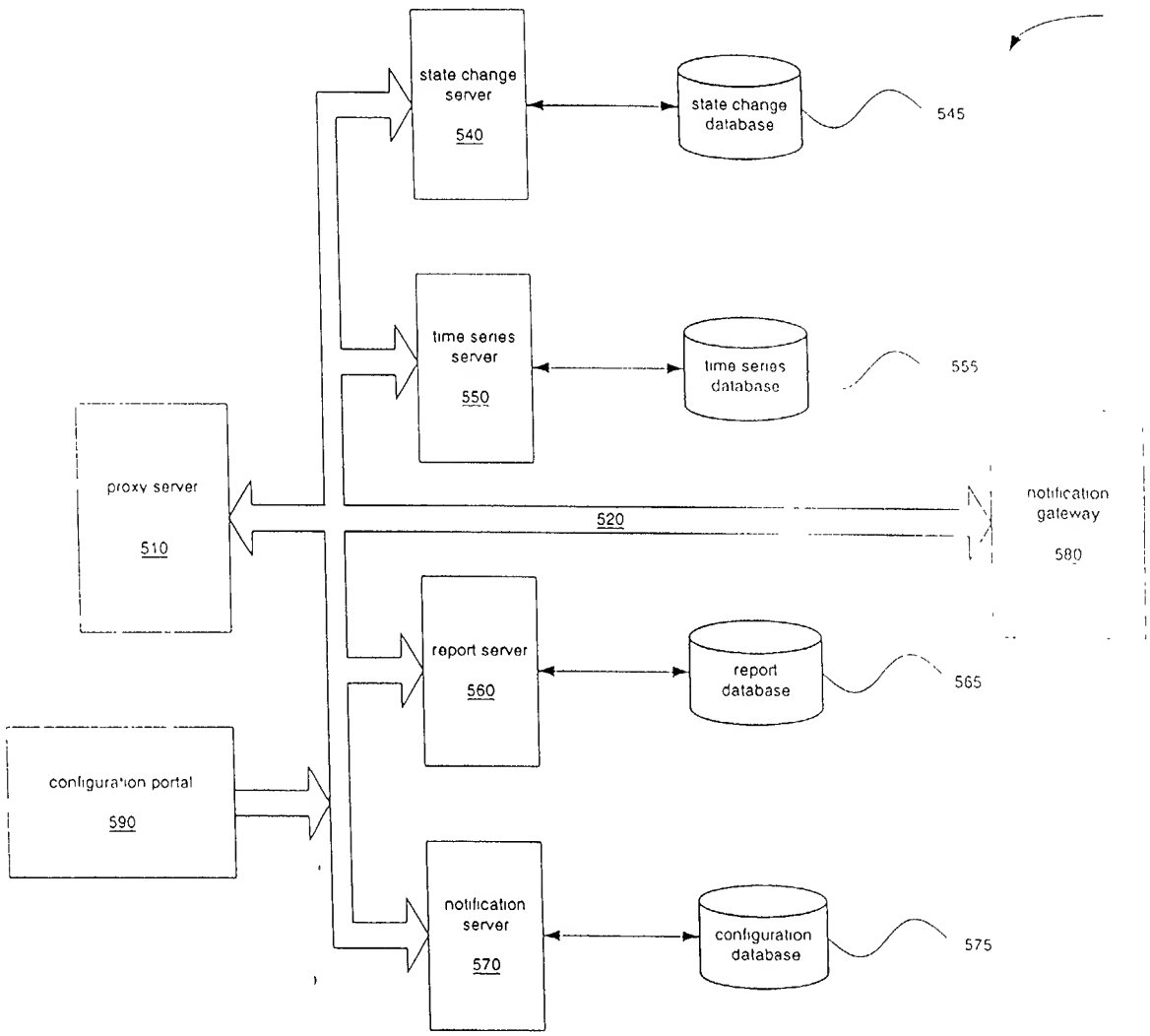
530
state change server
540
state change database
545
time series server
550
time series database
555
proxy server
510
520
notification gateway
580
report server
560
report database
565
configuration portal
590
notification server
570
configuration database
575

Figure 5

TOSBOT" ZTSTBOT

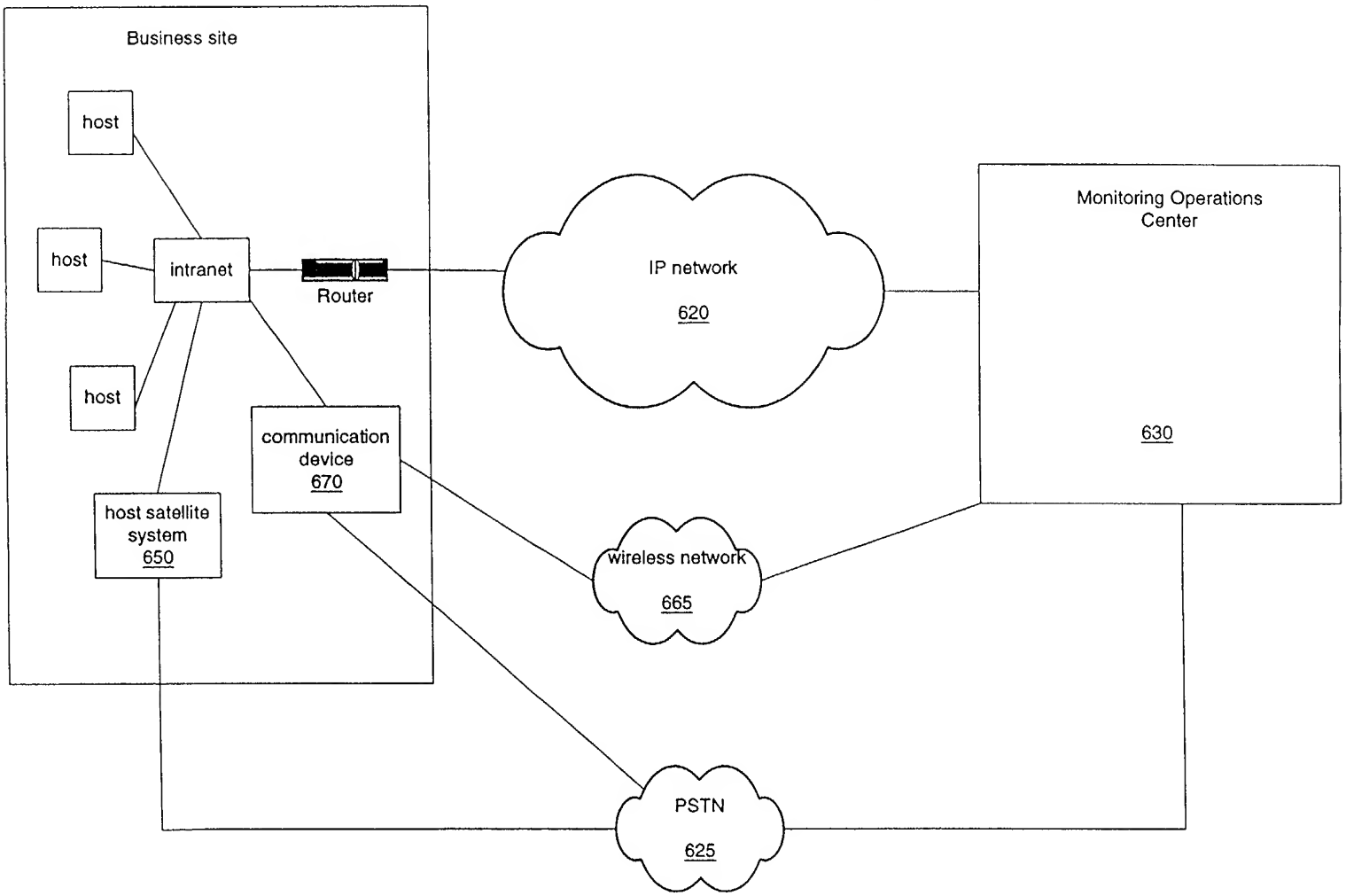


Figure 6

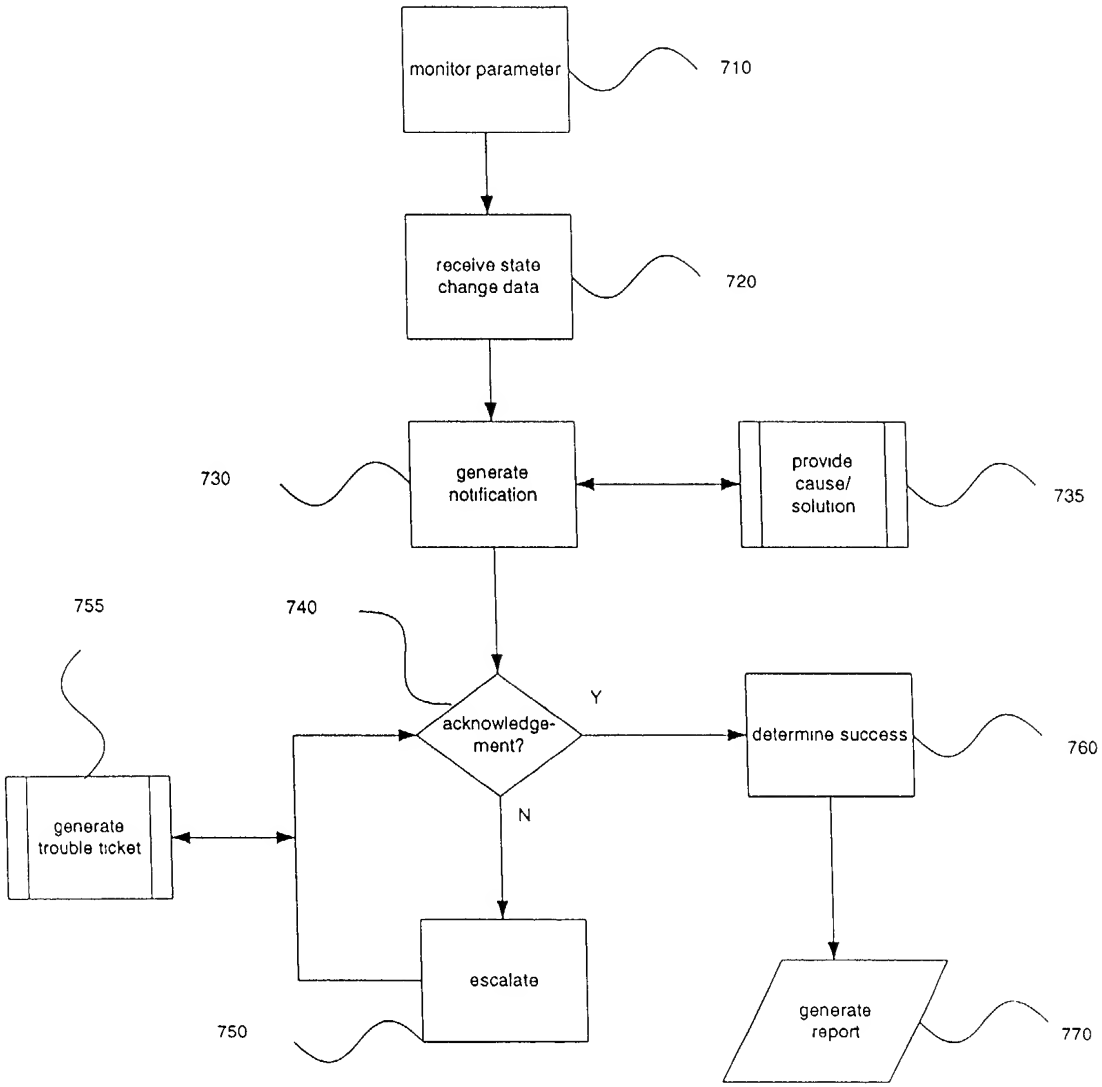
monitor parameter
710
receive state change data
720
730
generate notification
provide cause/ solution
735
755
740
acknowledge-ment?
Y
determine success
760
generate trouble ticket
N
escalate
750
generate report
770

Figure 7

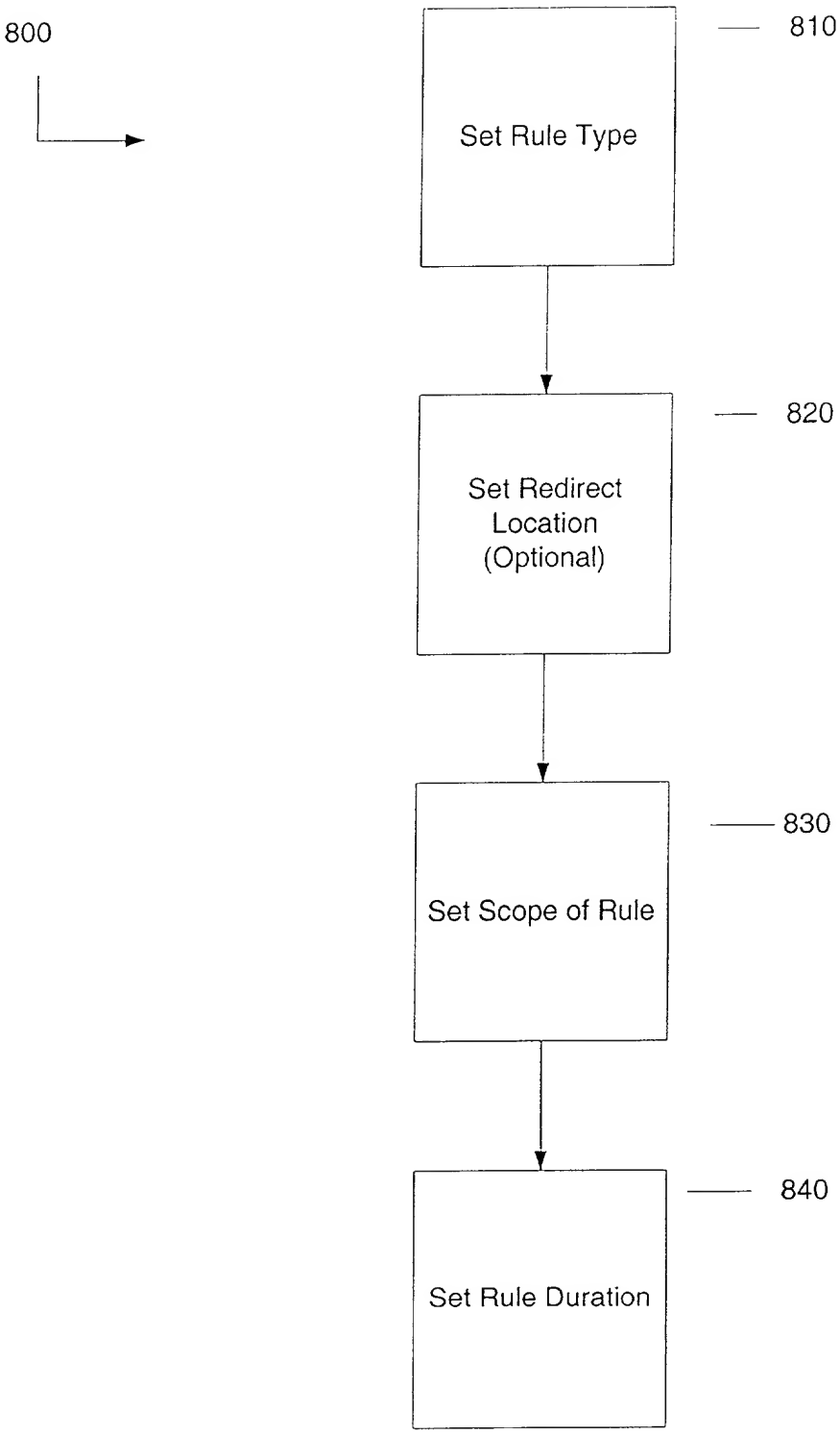
800
810
Set Rule Type
820
Set Redirect Location (Optional)
830
Set Scope of Rule
840
Set Rule Duration

Figure 8